Some Conſiderations
Of Mr. Nic. Mercator, *concerning the Geometrick and direct Method of Signior* Caſſini *for finding the Apogees, Excentricities, and Anomalies of the Planets; as* that *was printed in the* Journal des Scavans *of* Septemb. 2. 1669: *which Conſiderations are here delivered in the* Latine *Tongue, wherein they were written by the Author, as chiefly regarding the Learn'd in Aſtronomy*, viz.

Clariſſimi Caſſini *Methodus*
Inveſtigandi Apogéa, Excentricitates & Anomalias Planetarum, breviter Expoſita & Demonſtrata.

SUpponit Cl. *Caſſinus*, ad Planetam in Ellipſi moventem extendi ab utroque foco duas rectas, quarum altera ſit *medii*, altera autem *veri* motûs linea. Conſtructio porrò talis eſt;

Fig. II. L eſt Centrum Concentrici A B C D E.

B L D eſt Diameter.

B A, B C, B P, ſunt intervalla apparentia.

D E, D F, D Q, ſunt intervalla mediorum motuum.

B E, B F, B Q; item D A, DC, DP, ſunt lineæ rectæ.

B E ſecat D A in H; B F ſecat DC in G; B Q ſecat D P in R.

R H G eſt linea recta.

B I eſt perpendicularis ad R H G.

I eſt Centrum Ellipſeos.

L I eſt Excentricitas.

I O = L I.

O eſt focus, circa quem ordinatur medius motus; L, circa quem verus.

I M = I N = L B.

M eſt Apogéon; N, Perigeon; BLM Anomalia vera.

Demonſtratio.

I. Illuſtriſſimus ac Reverendiſſ. *Sethus Wardus*, quondam in Celeberr. Acad. *Oxon.* Profeſſor Aſtronomiæ Savilianus, nunc Epiſcopus Sarisburienſis, in *Examine Aſtronomiæ Philolaicæ*, edito Oxon. A. 1653. c. 6. docuit Methodum, ex data Anomalia *media* Planetarum, inveſtigandi *veram*; quæ eſt hujuſmodi:

Fig. III. C, eſt Centrum Ellipſeos AEP: F, focus, circa quem ordinatur medius motus. S, focus, circa quem ordinatur verus motus. A, Apogéon. P, Perigeon, E, Erro ſive Planeta. AFE, Anomalia media. ASE, Anomalia vera. FET, linea recta, E T = S E. S T eſt linea recta.

In △o S F T dantur, 1. S F diſtantia focorum: 2. F T = F E + E S = A P. 3. A F T, angulus externus, ſive Anomalia media, æqualis ſummæ angulorum F S T & T. Ergo inveniri poteſt F S E, ſive Anomalia vera, æqualis differentiæ Angulorum F S T & T. Nimirum

Vt

Ut ſemi-ſumma laterum F T & F S, ad ſemi-differentiam eorundem;
Ita Tangens ſemi-ſummæ angulorum F S T & T, ad Tangentem ſemi-differentiæ eorundem.

Sed ſemi-ſumma laterum F T & F S invenitur, ſubſtituendo pro F T æqualem AP, cujus ſemis eſt AC, qui additus CS ſemiſſi ipſius F S, facit Semi-ſummam AS, diſtantiam Planetæ maximam.

Tum, ſi ex ſemi-ſumma A S auferatur latus minus F S, reſtat ſemi-differentia laterum F A, æqualis PS, diſtantiæ Planetæ minimæ; ut ſit

Regula ex Anomalia *Media* data inveniendi *veram*:

Ut A S, diſtantia Planetæ maxima, ad PS, diſtantiam minimam;
Ita Tangens dimidiæ Anomaliæ mediæ, ad Tangentem dimidiæ Anomaliæ veræ.

Corollar. I. Si continuetur S E uſque ad U, ita ut E U ſit = ipſi F E, & tota S U = Axi AP; erit $\triangle^{i}$ F S U angulus U ſemis Proſtaphæreſeos F E S, ideóque æqualis ſemi-differentiæ angulorum Anomaliæ mediæ & veræ, h.e. ipſorum A F E & A S E; & externus A F U = ſemi-ſummæ eorundem A F E & A S E angulorum, ablata ſcil. ſemi-differentiâ U F E ex majori AFE. Unde oriuntur duæ Analogiæ:

1. Ut Sinus ſemi-ſummæ Anomaliæ mediæ & veræ A F U, ad Sinum ſemi-differentiæ eorundem, U; Ita S U (= axi tranſverſo A P) ad S F, diſtantiam focorum.

2. Ut Sinus ſemi-ſummæ Anomaliæ mediæ & veræ, A F V, ad Sinum Anomaliæ veræ F S U; Ita S U (vel axis A P) ad F U, ſubtenſam Anomaliæ veræ: Ita quoque ſemi-axis A C, ad ſemi-ſubtenſam U X, vel F X.

Corollar. II. Si in eodem Triangulo F S U, ex ſubtenſæ F U puncto medio X, erigatur perpendicularis X E; ſecabit illa S U in duas partes, quarum altera U E = eſt lineæ medii motûs F E, altera veró S E eſt ipſa linea veri motûs.

II. Fig. IV. Sit *a* Centrum Concentrici *c h f i*.
c a d, Diameter, eadémque linea Apſidum.
c h, Arcus Anomaliæ veræ, cui reſpondet
d i, Arcus Anomaliæ mediæ. Itaque
c d h, eſt Angulus dimidiæ Anomaliæ veræ, &
d c i, Angulus dimidiæ Anomaliæ mediæ.
c i & *d h* ſunt lineæ rectæ, ſecantes ſe mutuò in *g*.

Ab Interſectionis puncto *g* demittatur ad *c d* perpendicularis *g b*. Erit igitur,

db.*bg* :: Radius ad tang. *b d g* vel *c d h*.
Et *cb*.*bg* :: Rad. tang. *b c g* vel *d c i*.

Ergo

Ergo $db \times \text{tang.}\, cdh = bg \times \text{Rad.} = cb \times \text{tang.}\, dci$.

Quare $db . cb :: \text{tang.}\, dci . \text{tang.}\, cdh$; hoc eſt, db erit ad cb, ut tangens dimidiæ Anomaliæ mediæ ad tangentem dimidiæ Anomaliæ veræ; adeóque (per Regulam ſupra expoſitam) ut diſtantia Planetæ maxima, ad diſtantiam minimam. Quamobrem $db =$ erit diſtantiæ Planetæ maximæ, & cb, minimæ, & ab, excentricitati.

Cúmque idem eodem modo demonſtretur de cæteris omnibus Interſectionum punctis, nimir. Perpendiculares ab ipſis ad cd lineam incidere in punctum b; oportet, ut recta, jungens ipſas Interſectiones, congruat perpendiculari bgf.

III. Ductâ diametro hak, fiat arcus $kl =$ arcui id, & ducantur kc & hl, ſecantes ſe mutuò in p. Ab h in bgf demittatur perpendicularis hr, eadémque parallela Apſidum lineæ cd; erit angulus rhs ſemi-differentia arcuum Anomaliæ veræ ch, & mediæ di. Tum ab eodem h puncto ducatur recta $h\beta$, faciens cum kh angulum $=$ angulo rhs, & occurrens lineæ Apſidum in β, Erit $\triangle^i\, a\beta h$ angulus βah menſura arcûs ch, ſive Anomaliæ veræ, & βha ſemi-differentia Anomaliæ veræ & mediæ (ex Conſtructione;) & externus $c\beta h$ (æqualis duobus internis & oppoſitis βah & βha, adeóque compoſitus ex Anomalia vera & ſemi-differentia ejus à media) erit ſemi-ſumma Anomaliæ veræ & mediæ. Ergo, per *Corollarii* I^{mi} Analogiam priorem; Vt Sinus $c\beta h$, ad Sinum βha; ita Radius ah, ad Excentricitatem $a\beta$. Sed ſupra demonſtravimus quoque ab æqualem Excentricitati. Ergo punctum β congruit puncto b.

Tum ex b excitetur ipſi hb perpendicularis bt; Aio, hanc continuatam incidere in punctum Interſectionis p. Nam Triangula rhs & bht ſunt ſimilia, ex Conſtructione; quemadmodum & $\triangle^m\, hpk$ ſimile eſt $\triangle^o\, hgi$, cum eidem peripheriæ ch inſiſtentes anguli pkh & gih ſint æquales, nec non æqualibus peripheriis kl & id inſiſtentes anguli phk & ghi æquales; quare & tertius hpk æqualis eſt tertio hgi. Et ex æqualibus phk & ghi ablatis æqualibus bht & rhs, reſtant æquales phb & ghr. Vnde ſic arguo: $srh = tbh$, & $rhs = bht$, Ergo $hsr = htb$; ergò & Complementa horum ad ſemi-circulum ſunt æqualia, nimir. $rsi = btk$; & $sig = tkp$, Ergò & $igs = kpt$, quibus ablatis ex æqualibus igh, & kph, reſtat $hgs = hpt$; & $ghr = phb$, Ergo & $hrg = hbp$ Sed hrg eſt rectus, Ergò & hbp rectus eſt. Cùm verò & hbt rectus ſit ex Conſtructione, erit tb in directum ipſi bp. Cúmque idem eodem modo demonſtretur de quavis alia Interſectione linearum ab h & k ad congruentia Anomaliæ veræ & mediæ puncta ductarum; patet, non modò rectam, jungentem interſectiones, tranſituram per b punctum; ſed & hb, lineam perpendicularem fore ad eandem Jungentem. *q. e. dem.*

Corollarium. Si à quovis puncto Anomaliæ veræ, puta *b*, ad reſpondens punctum Anomaliæ mediæ *i* ducatur recta *hi*; excitata è Centro Excentrici *b*, ipſi *c b d* perpendicularis *b f* ſecabit ipſam *h i* in *s* eâ ratione, quam linea *medii* motûs obtinet ad lineam *veri* motûs.

Nam per *Corollarii* I^{mi} Analogiam poſteriorem, *hb* eſt ſemi-ſubtenſa; Ergò per *Corollarium* II^{um}, perpendicularis erecta ex *b*, nimir. *b t*, ſecat diametrum *h k* in *t* eâ ratione, qnam linea medii motûs obtinet ad lineam veri motûs. Ergò & *r s* (ſive *b f*) ſecat *h i* lineam eadem ratione in *s*; propter demonſtratam modò figurarum *t b h k p h b* & *s r h i g h r* ſimilitudinem.

Cæterùm ex laudata ſuperius Reverendiſſ. *Wardi* Methodo inveniendi primam inæqualitatem, non eſt difficile, alium adhuc modum inveſtigandi Apogéa & Excentricitates, non minùs directum & Geometricum, & Obſervationes *quotvis* admittentem, producere; quem & paucis exponam. Plures modos invenient Aſtrophili in Reverendiſſ. Viri *Aſtronomia Geometrica*, edita *A.* 1656, ad quam eos remitto. Interim

Fig. V. Sint *l* & *d* duo foci Ellipſeos; *t* & *u* duo puncta *veri* motûs Planetæ; arcus Ellipſeos *t u* ex *l* ſpectatus ſub angulo *t l u*, & ex *d*, ſub angulo *t d u*; item diſtantia focorum *l d* ex *t* ſpectatus ſub angulo *d t l*, & ex *u*, ſub angulo *d u l*: Aio, differentiam angulorum *t l u*, *t d u*, æqualem eſſe differentiæ angulorum *d t l* & *d u l*.

Cùm enim trianguli *l u x* tres anguli ſimul ſumpti æquales ſint trianguli *d t x* tribus angulis ſimul ſumptis; ſi auferantur utrinque æquales *l x u* & *d x t*, reliquorum duorum ſumma *u l x* + *l u x* erit = ſummæ reliquorum *t d x* + *d t x*, & ab his æqualibus ſummis ſi auferantur inæquales, v. g. *u l x* ex priori, & *t d x* ex poſteriori; reliquorum, *l u x* & *d t x*, differentia = eſt differentiæ ablatorum *u l x* & *t d x*; quod erat propoſitum.

Centro *l*, intervallo axis tranſverſi *m n*, deſcribatur Circulus *a b c*, cujus arcus *a b* rurſus ex *l* ſpectatur ſub angulo *a l b*, & ex *d*, ſub angulo *a d b*; item diſtantia focorum *l d* ex *a* ſpectatur ſub angulo *l a d*, & ex *b*, ſub angulo *l b d* Ergò rurſus differentia angulorum *a l b* & *a d b* = eſt differentiæ angulorum *l a d* & *l b d*. Sed per *Coroll. I.* angulus *l a d* ſemis eſt anguli *l u d*, & angulus *l b d* ſemis anguli *l t d*. Ergò horum angulorum *l a d* & *l b d* differentia = eſt ſemi-differentiæ angulornm *l u d* & *l t d*; ergò & angulorum *a l b* & *a d b* differentia = eſt ſemi-differentiæ angulorum *u l t* & *u d t*, quorum prior eſt intervallum apparens duarum Obſervationum, poſterior autem, intervallum motûs medii. Datâ igitur horum intervallorum differentiâ, datur quoque hujus (*differentiæ*) ſemis, nimir. differentia angulorum *a l b* & *a d b*. Sed *a l b* idem eſt cum *u l t* dato; Ergo datur quoque *a d b* angulus, ſub quo peripheria *ab* ſpectatur ex *d*.

Simili modo oſtendetur, differentiam angulorum *t l y* & *t d y* æqualem eſſe ſummæ angulorum *l t d* & *l y d*; nec non differentiam angulorum *b l c* & *b d c* = eſſe ſummæ angulorum *l b d* & *l c d*. Cûmque *l b d* ſemis ſit ipſius *l t d*, & *l c d* ſemis ipſius *l y d*; erit ſanè ſumma ipſorum *l b d* & *l c d* = ſemi-ſummæ angulorum *l t d* & *l y d*, hoc eſt, differentia angulorum *b l c* & *b d c* = erit ſemi-differentiæ angulorum *t l y* & *t d y*, quorum prior eſt intervallum apparens duarum Obſervationum, poſterior autem, intervallum motûs medii. Quare, datâ horum intervallorum differentiâ, datur quoque hujus ſemis, nimir. differentia angulorum *b l c* & *b d c*. Sed *b l c* idem eſt cum *t l y* dato; Ergò datur quoque *b d c* angulus, ſub quo peripheria *b c* ſpectatur ex *d*.

Unde liquet, ex datis intervallis Obſervationum mediis & apparentibus, dari angulos, ſub quibus ex *d* ſpectantur Circuli *a b c* peripheriæ quotvis, interceptæ à lineis veri motûs. Ergò, per *Herigoni Theor. Plan.* l. 1. c. 3. Prop. 12. *Schol.* 1. totidem Circuli ſegmenta deſcribi poſſunt, capacia angulorum, ſub quibus iſti arcus conſpiciuntur ex *d*, quæ ſegmenta omnia ſe mutuò interſecabunt in *d*. Poſſunt igitur & hac Methodo inveniri Apogéa & Excentricitates Planetarum, delineatione Geometricâ, adhibitis Obſervationibus *quotvis*; nec difficilius eſt, Circulos ducere, quàm lineas rectas.

Sed ut demus id, quod verum eſt, Clariſſimi *Caſſini* delinationem Geometricam non-nihil expeditiorem eſſe; verendum eſt interim, ne, ſi ἀκρίβειαν Aſtronomis expetitam ſectemur, Diagrammata requirat enormis magnitudinis, adeóque operoſior evadat, quàm ipſe Calculus. Ad hunc autem accedentes, utramque Methodum æquipollere deprehendemus.

Adhibeamus enim ex Obſervationibus *Tychonicis* tres, quæ Dom. *Caſsini* Diagrammati quodammodo conſentiant; nim. Obſervationem A, cùm *An.* 1604, *Mart.* 28 *d.* 16 *h.* 23 *m.* *Mars* obſervatus fuit in ♎ 18 *g.* 37 *m.* 10 *s.* B, cum *An.* 1587, *Mart.* 6 *d.* 7 *h.* 23 *m.* idem Planeta viſus fuit in ♍ 20 *g.* 43 *m.* 0 *s.* Denique C, cùm *An.* 1600 *Jan.* 18 *d.* 14 *h.* 2 *m.* deprehenderetur in ♌ 8 *g.* 38 *m.* 0 *s.* Eſt igitur inter A & B intervallum apparens 22 *g.* 54 *m.* 10 *s.* & huic reſpondens medium 25 *g.* 58 *m.* 40 *s.*; at inter B & C intervallum apparens 47 *g.* 5 *m.* 0 *s.* & medium 56 *g.* 21 *m.* 57 *s.* Itaque

Methodo Caſſini, Fig. *II*.

1. In Triangulo D B H,
Dantur D B 10, 00000
D B H 12 |99
B D H 11 |45
Quæritur B H 9,68106

2. In Triangulo DBG.
Dantur D B 10, 00000
D B G 28 |18
B D G 23 |54
Quær. B G 9,70653

3. In Triangulo HBG.
Dantur B H 9, 68106
B G 9,70653
H B G 41 |17
Quær. B G H 64 |95
Cujus Compl. GBI 25 |05
Si auferas ex GBD 28 |18
Reſtat IBD vel IBL 3 |13

4. In Triangulo G B I.
Dantur B G 9, 70653
G I B 90
G B I 25 |05
Quær. B I 9,66363

5. In Triangulo I B L.
Dantur B I 9, 66363
BL (ſemis τῶ BD) 9,69897
IBL 3 |13
Quær. BLI 32 |31, An. vera, & L I, 8,67284, Excentricitas.

Methodo Herigoni, Fig. *V*.

1. In Triangulo *d b h*,
Dantur *db* 10, 00000
a d b externus 24 |44
b h d 11 |45
Quær. *b h* 10, 31894

2. In Triangulo *d b g*,
Dantur *d b* 10, 00000
c d b externus 51 |72
b g d 23 |54
Quær. *b g* 10, 29347

3. In Triangulo *h b g*,
Dantur *b h* 10, 31894
b g 10, 29347
h b g 41 |17
Quær. *b h g* (vel *bhi*) 64 |95 = *b s g*
Et *h i b* = *s g b* = 90.
Ergo *h b i* = *g b s* = 25 |05
Ex *gbi* = *gbs* + *sbi* (= *hbg* — *hbi*) = 16 |12
Aufer *d b h* = *h b i* — *d b i* = 12 |99
Reſtat *gbs* + *sbi* — *hbi* + *dbi* = *sbd* (vel *dbl*) 3 |13

4. In Triangulo *g b s*
Dantur *b g* 10, 29347
b g s 90
g b s 25 |05
Quær. *b s* 10, 33637

5. In Triangulo *d b l*,
Dantur *b d* 10, 00000
b l (ſemis τȣ̃ *b s*) 10, 03534
d b l 3 |13
Quærit. *b l d* 32 |31 Anom. vera
Et *l d* 9,00926 Excentricitas.

Nimir. Ut Fig. *II*. B L 9,69897, ad L I, 8,67284;
Ita Fig. *V*. *bl* 10,03534, ad *ld* 9,00926.

	s.	*g.*	*m.*	*ſec.*
Ex loco apparenti ſecundæ Obſervationis	5	25	43	0
auferatur angulus Anomaliæ veræ B L I	1	2	18	36
Reſtat locus Apogéi	4	23	24	24

Erat autem reverà ævo *Tychonis* Apogeon *Martis* in ♌ 28 $\frac{1}{2}$ *d.*, à quo deficit iſte locus, calculo inventus, ſolidis quinque gradibus. Porrò,

Ut B L 9,69897, } Ita 5,18290 Log-us 152369 diſtantiæ med. ♂tis,
ad L I 8,67284; } ad 4,15677 Log-um 14347 Excentricitatis ♂tis.

Eſt autum vera Excentric. ♂tis 14179, quam iſta, calculo inventa, excedit $\frac{168}{14179}$ particulis.

Cæterum in ratiocinio ſecundùm utramque Methodum inſtituto notare licet non modò perpetuam Triangulorum ſimilitudinem, ſed & Epilogiſmi congruentiam; ne quis Apogéi & Excentricitatis ſic inventæ à vero diſcrepantiam cenſeat errori Calculi imputandam. Sed nec Obſervationum vitio contingit; quas in dubium vocare nil aliud foret, quàm principia in Aſtronomia negare. Itaque reſtat, ut Hypotheſin excutiamus.

Et *Ellipticæ* quidem Orbitæ Inventio ſine controverſia *Keplero* debetur; ſed quibus Accelerationis & Retardationis gradibus incedant Planetæ, definire, non minùs pertinet ad integrandam Hypotheſin, quàm ipſius Orbitæ determinatio. Quanquam autem ex Cl. *Caſſini* (vel Interpretis ejus) ſermone id nuſquam apparet; attamen ex Conſtructione Problematis, & ejus Analyſi, manifeſtum eſt, eum ſupponere, Planetam ex foco ſuperiori videri prorſus æquabili motu incedere. Fuit ſanè, cùm idem exiſtimaret *Keplerus*, quod ejus Scripta evolventibus liquere poteſt. Sed cum id Obſervationibus nequaquam congruere animadverteret, mutavit ſententiam, & lineam veri motûs Planetæ æqualibus temporibus æquales areas Ellipticas verrere profeſſus eſt: Punctum autem, ex quo Planeta exactè æquabili motu procedere videtur, nullum omninò extare in hoc Univerſo, niſi id libratile ſtatuere libeat. Nulli interim puncto propriùs æquabilem videri inceſſum Planetæ, quàm ipſi foco ſuperiori Ellipſeos. Neque inventus fuit hactenus, qui areas *Kepleri* phænomenis ſatisfacere poſſe negaret; ſed, cum eas Calculo directo exhibere nec ipſe nec poſt eum quiſquam potuerit, cauſati ſunt nonnulli, *Keplerum*, nimis indulgentem cauſis *Phyſicis*, à *Geometria* diverſum abiiſſe; quaſi cauſæ phyſicæ repugnent Geometriæ, aut minus Geometricum ſit Problema, quod, nullâ injectâ phyſicarum cauſarum mentione, ſic proponitur: *Data area Trilinei, inter lineas abſidum, & veri motus, nec non peripheriam Ellipticam intercepti, invenire Angulum ad Solem.* Habent igitur à *Keplero* reſponſum, qui illi ἀγεωμετρίαν objiciunt; nim. *Eant ipſi & Schema ſolvant.*

Quamvis autem religio fuerit *Keplero*, ab Hypotheſi, quam *Naturalem* eſſe planè perſuaſum habebat, recedere; quidni liberum foret aliis periculum facere, num via quævis alia detur, inæqualitatem Planetarum primam directo Calculo inveſtigandi? Ideoque Vir Clariſſ. *Iſm. Bullialdus* aggreſsus eſt ratiocinio Geometrico indagare, quâ ſemitâ, & quibus intenſionis ac remiſſionis gradibus conveniret Planetas ferri, ut ab æquabili inceſsûs norma, Aſtronomis ante *Keplerum* aſſumptâ, ad eam, quam ſpectamus, Inæqualitatem perduceremur. Perennant Illuſtriſſimi viri

monu-

monumenta, unde omnem hujus Inventi rationem haurire licet Aſtrophilis. Amplexus eandem Reverendiſs. *Seth. Wardus*, primùm oſtendit, paria facere cum linea æquabilis motûs circa alterum Ellipſeos umbilicum gyrata; deinde & Calculi directi methodo ornavit eâ, quam paulò antè recitavimus: Ita ut nil amplius deſiderari poſset, quàm ut *Urania* felicibus cæptis annueret. Cujus quidem nomine ſuſcipere auſus fuit Illuſtriſs. Comes *Paganus*, edito, *biennio poſt*, ejuſdem ferè tenoris Scripto, adeò veram eſſe Hypotheſin, ut deprehenſam circa Octantes diſcrepantiam, Aſtronomorum inſcitiæ tributam mallet. At Cl. *Bullialdus*, audiendam potiùs ipſam Aſtronomiam ratus, Obſervatorum ore loquentem, ſecundis curis, adhibita prioribus Inventis limitatione quadam, diſcrepantiam illam exterminavit. Unde porrò intelligitur, Hypotheſin illam, cui Cl. *Caſſinus* inveſtigationem Apogeorum & Excentricitatum ſuperſtruit, tantundem ferè deficere à vero, quantum Cl. *Bullialdi* limitatio pollet, atque ab illo defectu pullulare eum, quem ſuprà notavimus, Calculi à Cœlo diſſenſum.

Tantùm vero abeſt, ut de Eximii Viri Inventione vel minimum delibatum velim, ut quicquid hujus lucubratiunculæ non hauſi ex Reverendiſſ. *Wardo*, vel *Herigono*, id omne Ipſi libentiſſimè acceptum referam, qui anſam nobis præbuit hæc altius conſiderandi. Nec dubitamus, quin omnia iſta multò uberiùs ac luculentiùs in promiſſo *Tractatu* expoſita propediem reperturi ſimus, cujus Editionem maturam, pro eo qno flagramus diviniſſimæ Scientiæ amore, perquàm avidè exſpectamus.

An Account of Three Books.

I. Eſperienze *intorno alla* Generatione Degl' Inſetti, *fatte da* Franciſco Redi, *Academico della Cruſca. In* Firenze, *A.* 1668. *in* 4o.

THe Learned and Ingenious Author of this Book, lately come to the Publiſhers hands, though not yet (which is much diſliked by the curious) into our Stationers Shops, doth with much induſtry undertake therein to evince, that there is no ſuch thing as *Æquivocal* Generation but that every Animal is generated by the ſeed of another Animal, (its parent,) or, at leaſt, from ſome Living and un-corrupted Plant, as out of Oak-Apples, and ſeveral Protuberances and Excreſcencies of Vegetables.

Firſt then, in the aſſerting of the *Univerſal* and true Generation of Inſects by a peculiar and paternal Seed, the Author poſitively affirms, that he could never find, by all the Experiments and Obſervations, he ever made (of which he relateth a great number, by himſelf made upon all ſorts of Animals) that ever any Inſects were bred from Fleſh, or Fiſh, or *putrified* Plants, or any other Bodies, but ſuch, as Flies had acceſs unto, and ſcatter'd their ſeed upon; he having taken extraordinary care and pains to obſerve, that alwayes on the Fleſh, before it did verminate, there ſate Flies of the ſelf ſame kind with thoſe, that were afterwards produc'd thence; and again, that no Worms would ever come from any Fleſh in Veſſels well cover'd, and defended from the acceſs of Flies; ſo that to him there is no generation of Inſects from any dead Animals, but ſuch as have been fly-blown.

And leaſt it ſhould be objected, that the reaſon, why in veſſels exactly cloſ'd, no Inſect breeds, is the want of Air, neceſſary to all Generation, He hath carefully covered ſeveral veſſels with very fine Naples-vaile, for the Air to enter, though Flyes could not; but that no worms at all were bred there, notwithſtanding that many Flyes ſwarmed about them, invited by the ſmel of the Fleſh incloſed therein.

Secondly, to make out the other part of his Poſition, *viz.* That thoſe Animals that are not bred by the ſeed of other Animals, are produced from ſome live Plant, or its

Excre-

Fig. II.

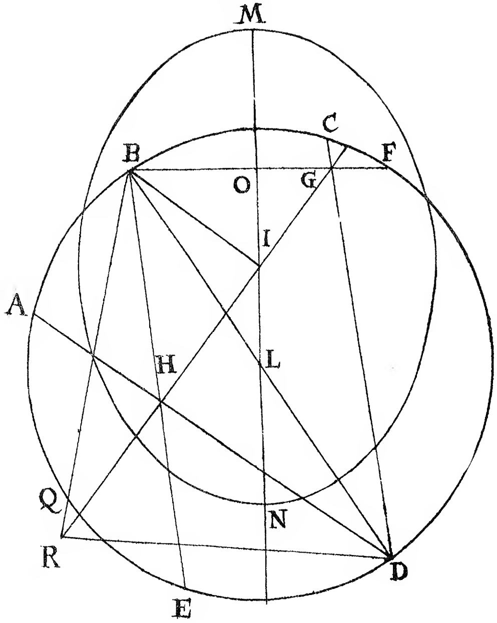

Fig. III.

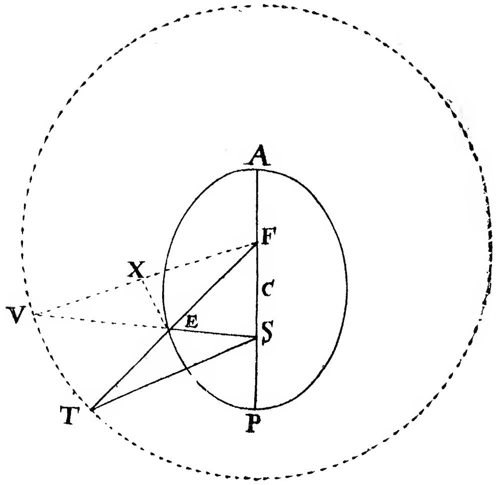

Fig I.

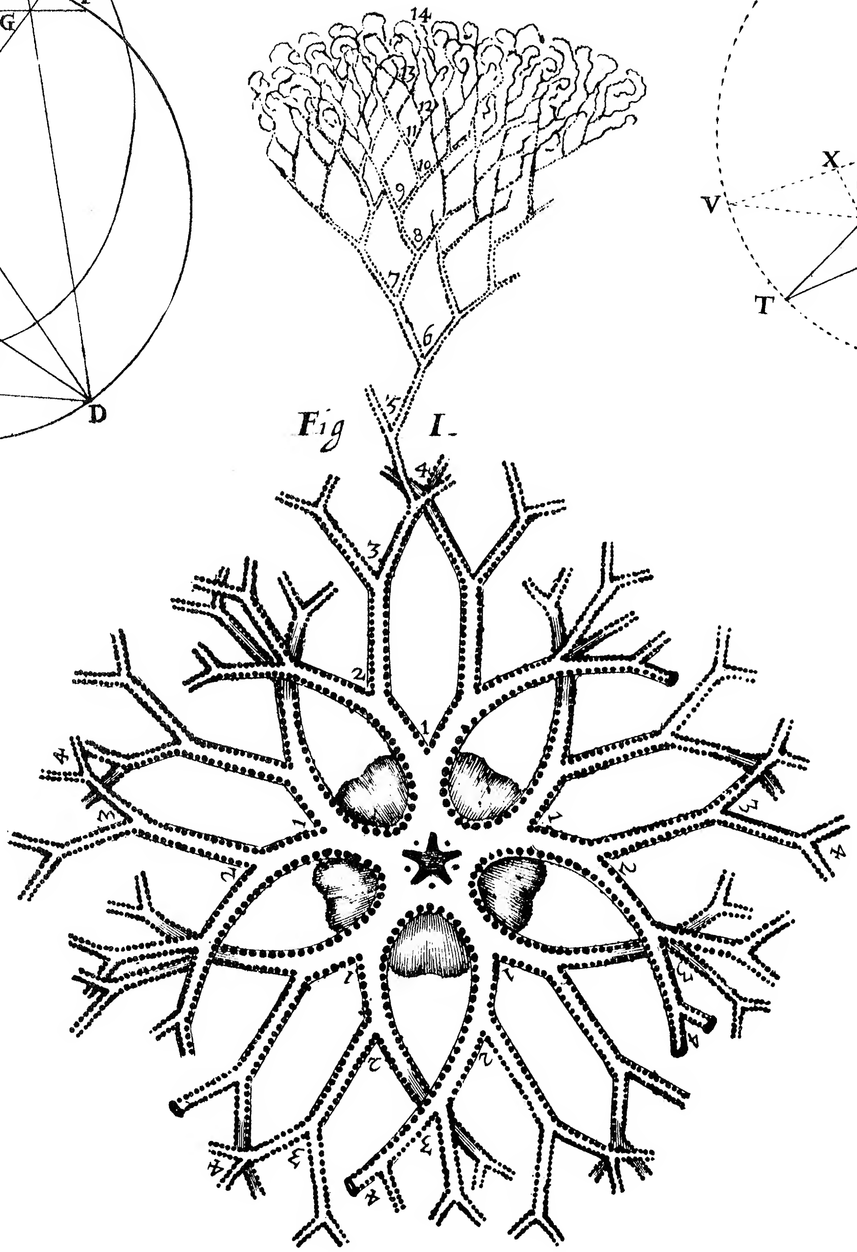

Fig. IV

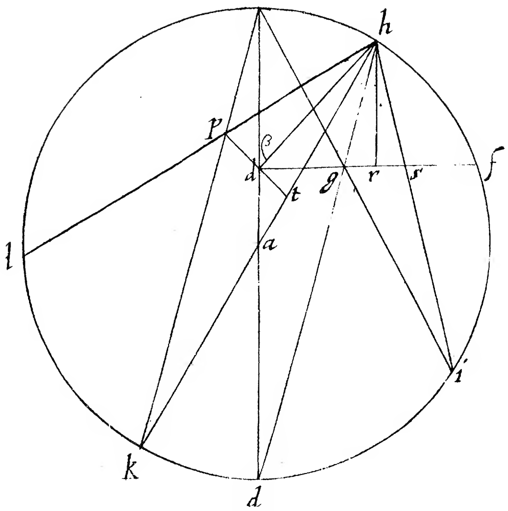

Fig. V.